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SUBJECT: GE BUILDING THE WORLD'S LARGEST SOLAR ENERGY PLANT IN PORTUGAL

**¶1.** SUMMARY: GE Energy Financial Services has joined with the PowerLight Corporation (US) and Catavento (Portugal) to construct the world's largest solar photovoltaic (PV) power plant, slated to open in January 2007. This \$75 million project - located in Serpa, Portugal - is GE's first solar power venture in Europe. The project is expected to increase Portugal's current PV capacity by 400% and provide electricity to over 8,000 households. END SUMMARY.

#### ABOUT THE PROJECT

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**¶2.** On July 6, POL/ECON Officer met with Piero Dal Maso, co-CEO of the Portugal-based energy firm Catavento Produo de Energia Elica, Lda, to discuss its joint venture with GE and PowerLight to build the world's largest PV power plant. Catavento is one of only a handful of renewable energy firms in Portugal and has already invested heavily in several wind farm projects.

**¶3.** In 2002, Catavento developed a proposal to create a large scale solar PV power plant in Serpa, Portugal. The Serpa region is considered one of the sunniest areas in Europe and is located approximately 130 miles southeast of Lisbon on the Spanish border.

**¶4.** Catavento shopped its proposal in Europe and the United States. In 2004 and 2005 respectively, the PowerLight Corporation and GE joined the project. GE will finance and own the project and has invested \$75 million in its construction and maintenance. The PowerLight Corporation is responsible for its operation and for installing the PowerTracker system. PowerLight created the PowerTracker technology which is the most widely used solar power system in the world. Catavento will provide project management services and liaison with the host government for licenses and permits.

**¶5.** The construction of the 150-acre Serpa PV power plant began in May 2006 and is expected to be completed by January 2007. Currently, the Bavaria SolarPark in Germany is the world's largest PV power plant. GE estimates that the Serpa plant will produce enough electricity to power over 8,000 homes and save over 30,000 tons of greenhouse gas emissions per year.

#### ENERGY IN PORTUGAL

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**¶6.** In 2005, Portugal's electricity and heating needs were provided by the following sources: natural gas/thermal (29%), coal (24%), petroleum/gas (23%), hydro (12%), wind (7%), and

other (5%). Other includes solid biomass/biogas (living and dead biological material like plants and fermented organic matter), wave power (from ocean surface waves) and photovoltaics (solar cells that collect and convert sunlight).

¶7. In 2001, Portugal and Spain drafted a plan to create a joint electricity market called the Mercado Ibrico de Electricidade (MIBEL), which would completely integrate the two country's electricity markets and regulate the costs of energy while increasing the efficiency of regional electricity grids. Because of regulatory delays on both sides of the aisle, the MIBEL project has not been implemented.

#### RENEWABLE ENERGY RESOURCES (RES) IN PORTUGAL

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¶8. Portugal has limited domestic energy reserves and depends heavily on imports. During the 1990s, Portugal began investing in energy from within its borders and exploring alternative forms that were both cost effective and environmentally safe. Following the lead of countries such as Germany and Spain, Portugal began investing in Renewable Energy Sources (RES) such as hydro, wind, solar and solid biomass.

¶9. Hydro and wind energies are the two most popular RES used in Portugal. Hydro is not very reliable as its production levels vary depending on the amount of rainfall per year. Hydropower accounts for 12% of electricity production, down from just over 30% in 2000. During extremely dry seasons it can account for less than 10%. Wind energy is more reliable because of its production consistency, but it is difficult to store and expensive to convert. The use of solar energy, while accounting for less than 1% of overall energy production, is growing at a steady rate each year.

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¶10. By 2010, the GOP plans to increase its production of wind energy by 250%, hydropower by almost 400%, and solar energy by 1000%. In order to meet its 2010 energy goals, the GOP launched an international tender for three large-scale wind parks with capacities of 1,000 megawatts (MW), 500 MW and 200 MW. In addition, a second PV solar plant project is planned for Moura, Portugal. British Petroleum Solar and Amper Central Solar, S.A. are the two major stakeholders in this ambitious 62 MW capacity project. If successful, that project would surpass the Serpa PV power plant six times over in size and capacity. At this point, little has been publicly released about the project, its production costs or its prospective construction dates.

#### OBSTACLES TO CHANGE

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¶11. Major obstacles that may prohibit Portugal from reaching its 2010 renewable energy goals are insufficient government funds, bureaucratic inefficiencies in processing permits/licenses, a lack of a technically-trained workforce (Portugal has among the highest high school drop-out rates in Europe), and access to land not already deemed "environmentally protected".

¶12. COMMENT: With the rising costs of fuels on the world market, the GOP now realizes more than ever that it must reduce its dependency on external energy supplies. The Serpa PV power plant project is a step in the right direction and shows that Portugal is dedicated to promoting the use of alternative energies and open to direct investment. Portugal's geographic location is ideal for many renewable energy projects, and the Azores archipelago presents additional opportunities for hydropower and geothermal energy production. END COMMENT.  
Hoffman